

**What is claimed is:**

- 1           1. A self-aligned fabrication process for a nozzle  
2 plate of an inkjet print head, comprising the steps of:  
3           providing a substrate having at least one activated  
4           device thereon;  
5           forming a first film on the substrate;  
6           forming a second film on the first film;  
7           defining the second film to form a convex portion  
8           corresponding to the activated device, exposing a  
9           part of the surface of the first film;  
10          forming a third film on the exposed surface of the  
11          first film, covering the convex portion;  
12          removing the third film on the convex portion; and  
13          etching the convex portion and the first film under the  
14          convex portion to form a via.
- 1           2. The self-aligned fabrication process for a nozzle  
2 plate of an inkjet print head as claimed in claim 1, wherein  
3 the substrate is a silicon substrate.
- 1           3. The self-aligned fabrication process for a nozzle  
2 plate of an inkjet print head as claimed in claim 1, wherein  
3 the third film is made of spin-on-glass.
- 1           4. The self-aligned fabrication process for a nozzle  
2 plate of an inkjet print head as claimed in claim 1, wherein  
3 the third film on the convex portion is removed by etching  
4 to expose the surface of the convex portion.

1           5. The self-aligned fabrication process for a nozzle  
2 plate of an inkjet print head as claimed in claim 1, wherein  
3 the third film on the convex portion is removed by  
4 photolithography.

1           6. The self-aligned fabrication process for a nozzle  
2 plate of an inkjet print head as claimed in claim 1, wherein  
3 the via is formed by plasma dry etching.

1           7. The self-aligned fabrication process for a nozzle  
2 plate of an inkjet print head as claimed in claim 6, wherein  
3 the plasma dry etching uses oxygen as the main etching gas.

1           8. The self-aligned fabrication process for a nozzle  
2 plate of an inkjet print head as claimed in claim 1, wherein  
3 the first film is a polymer film.

1           9. The self-aligned fabrication process for a nozzle  
2 plate of an inkjet print head as claimed in claim 1, wherein  
3 the second film is a polymer film.

1           10. The self-aligned fabrication process for a nozzle  
2 plate of an inkjet print head as claimed in claim 1, wherein  
3 the activated device is a thin-film heater.

1           11. A self-aligned fabrication process for a nozzle  
2 plate of an inkjet print head, comprising the steps of:  
3       providing a silicon substrate having at least one  
4       activated device thereon;  
5       forming a first film on the substrate;  
6       forming a second film on the first film;

7 defining the second film to form a convex portion  
8 corresponding to the activated device, exposing a  
9 part of the surface of the first film;  
10 forming a spin-on-glass film on the exposed surface of  
11 the first film, covering the convex portion;  
12 removing the spin-on-glass film on the convex portion;  
13 and  
14 etching the convex portion and the first film under the  
15 convex portion to form a via.

1 12. The self-aligned fabrication process for a nozzle  
2 plate of an inkjet print head as claimed in claim 11,  
3 wherein the spin-on-glass film on the convex portion is  
4 removed by etching to expose the surface of the convex  
5 portion.

1 13. The self-aligned fabrication process for a nozzle  
2 plate of an inkjet print head as claimed in claim 11,  
3 wherein the spin-on-glass film on the convex portion is  
4 removed by photolithography.

1 14. The self-aligned fabrication process for a nozzle  
2 plate of an inkjet print head as claimed in claim 11,  
3 wherein the via is formed by plasma dry etching.

1 15. The self-aligned fabrication process for a nozzle  
2 plate of an inkjet print head as claimed in claim 14,  
3 wherein the plasma dry etching uses oxygen as the main  
4 etching gas.

1           16. The self-aligned fabrication process for a nozzle  
2 plate of an inkjet print head as claimed in claim 11,  
3 wherein the first film is a polymer film.

1           17. The self-aligned fabrication process for a nozzle  
2 plate of an inkjet print head as claimed in claim 11,  
3 wherein the second film is a polymer film.

1           18. The self-aligned fabrication process for a nozzle  
2 plate of an inkjet print head as claimed in claim 11,  
3 wherein the activated device is a thin-film heater.